

THE STRUGGLE FOR EXISTENCE

127

at the end of the stone age in the lake dwellings of Switzerland.

Perhaps they were only decorative.¹ The Polynesians used stone axes which were polished but not bored or grooved, and the edge was not curved.² The Pacific islanders clung to the type of the adze, so that even when they got iron and steel implements from the whites they preferred the knife of a plane to an ax, because the former could be used adze-fashion.³ In the stone graves of Tennessee have been found implements superior to all others found in the United States in size, variety, and workmanship.

Amongst these are a flint sickle-shaped tool, axes a foot long or more, a flint sword twenty-two inches long, a flint needle eight inches long; also objects supposed to be for ceremonial or decorative use. Stone axes with handles all in one piece have been found in Tennessee, Arkansas, and South Carolina.⁴

129. How stone implements are made. What was the process by which these stone implements were made? The artifacts bear witness directly to two or three different operations, separate or combined, and to a great development of the process.

As above stated, Tasmanians, after they became known to Europeans, made stone implements as they needed them, giving to a stone a rude adaptation to the purpose by chipping off a few flakes. Short sharp blows were struck by one stone upon another. The blow must, however, fall upon just the right spot or it would not produce the desired result. Therefore the flakes were often thrown off by pressure. A stick or horn was set against the spot where the force should be applied, and braced against the breast of the operator, while he held the stone between his feet.

This latter operation is described as used by the Mexicans to get flakes of obsidian.⁵ By carrying further the process of chipping or pressing the stone could be shaped more perfectly, and by rubbing it on another stone it could be given a cutting edge.

¹ Ranke, *Der Mensch*, II, 519.

² Ratzel, *Volkerkunde*, II, 149.

⁸ Hagen, *Unter den Papuas*, 214; Pfeil, *Aus der Sildsee* 97.

⁴ Thurston, *Antiq. of Tenn., etc.*, 218, 230-240, 259; JAI, XIII, XVI; *Bur. EthnoL*, XIII; *Smithson. Rep.*, 1874, 1877, 1886, Parts I, II, III; *Peabody Mus.*, No. 7.

⁵ Lubbock, *Prehist. Times*, 90.